

AMENDMENTS TO THE CLAIMS

LISTING OF CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method for ~~identifying a peptide that binds to a surface~~ having a target geometrical shape, comprising:
 - ~~a) contacting a first solid surface comprising a self-assembled surfactant monolayer and comprising a first geometrical shape with a phage display library under reaction conditions, wherein the phage express an exogenous peptide;~~
 - ~~b) contacting a second solid surface comprising the self-assembled surfactant monolayer and comprising a second geometrical shape with phage that bind to the first surface; wherein phage that bind to the second surface are excluded, and wherein the non-binding phage are re-contacted with the first surface;~~
 - ~~c) repeating step (b); and~~
 - ~~d) identifying a peptide that binds to the first surface and not the second surface; wherein the peptide of step (d) discriminates between the surfactant monolayer and the first geometrical shape.~~

(a) exposing a library of phage to a target surface of a material having specific geometrical patterns, wherein each phage of at least a portion of the library of phage displays a different exogenous peptide sequence on a surface of the phage,

(b) incubating the library of phage to produce bound phages that are bound to the target surface,

(c) removing the bound phages,

- (d) repeating steps (a) to (c) for a plurality of times,
- (e) identifying one or more desired elements of the bound phages, wherein the one or more desired elements are present in every evolution round of repeating steps (a) to (c), and
- (f) isolating and sequencing the one or more phages having the one or more desired elements.

2. (Currently amended) The method of claim 1, wherein the target ~~geometrical shape of the first solid surface is a flat surface and the geometrical shape of the second solid surface is a smooth or curved surface.~~

3. (Canceled).

4. (Currently amended) The method of claim 1, wherein ~~at least one of the first or second surfaces~~ target surface is hydrophobic.

5. (Currently amended) The method of claim 1, wherein step (d) ~~(e)~~ is repeated at least three times.

6. (Currently amended) The method of claim 5, wherein during each successive round of step (e) ~~(d)~~, the reaction conditions are more stringent than in a ~~the~~ prior round.

7. (Currently amended) The method of claim 1, further comprising amplifying the

bound phages ~~phage using a sloppy amplification reaction.~~

8-9. (Cancelled)

10. (Currently amended) The method of claim 1, wherein the ~~first or second~~ target surface is a substrate for scanning probe microscopy.

11. (Currently amended) The method of claim 1, wherein the ~~first or second~~ target surface comprises graphite.

12. (Currently amended) The method of claim 11, wherein the ~~first or second~~ target surface comprises highly ordered pyrolytic graphite.

13-14. (Cancelled)

15. (Currently amended) The method of claim 1, wherein the ~~first or second~~ target surface is flat, smooth, or curved, and wherein the ~~first or second~~ target surface comprises boron nitrate, lead sulfide, zinc selenide, cadmium selenide, cadmium sulfide, gallium arsenide, aluminum arsenide, zinc sulfide, gallium nitrate, indium phosphate, or gallium arsenide.

16. (Currently amended) The method of claim 1, wherein the ~~first or second~~ target surface comprises mica, silicon, or annealed gold.

17. (Currently amended) The method of claim 1, wherein the ~~first or second~~ target surface comprises Teflon.

18. (Currently amended) The method of claim 1, ~~further~~ comprising determining amino acid sequences which comprise the ~~identified~~ exogenous peptide.

19. (Currently amended) The method of claim 1, ~~further~~ comprising determining nucleotide sequences which encode the ~~identified~~ exogenous peptide.

20-36. (Canceled).

37. (New) The method of claim 1, comprising removing an unbound phage prior to removing the bound phages.

38. (New) The method of claim 1, wherein at least a portion of the target surface comprises a surfactant.

39. (New) The method of claim 1, wherein the one or more desired elements present in every evolution of repeating steps (a) to (c) are present differently.